Supplementary File - Table 1. Search strategy and inclusion criteria for participants in the study

Search strategy for the Web of Science database
((“shoulder pain” OR “adhesive capsulitis” OR “frozen shoulder” OR “rotator cuff pain” OR “shoulder Impingement syndrome” OR “ shoulder instability” OR “Unstable shoulder”) AND (("assessment" OR "diagnosis" OR "evaluation") OR (“manual therapy” OR “rehabilitation” OR “exercise” OR “physical therapy” OR “physiotherapy”))) Analysis: PUBLICATION YEARS: (2020 OR 2019 OR 2018 OR 2017 OR 2016 OR 2015 OR 2014 OR 2013 OR 2012 OR 2011 OR 2010 OR 2009 OR 2008 OR 2007 OR 2006) AND WEB OF SCIENCE CATEGORIES: (REHABILITATION) AND DOCUMENT TYPES: (ARTICLE OR REVIEW) *Only authors who had at least 5 scientific publications in the search strategy were considered for their inclusion in the Delphi Study.
Inclusion criteria
- To be a physical therapist. - To have at least 5 scientific publications about shoulder pain. - To have at least 10 years of clinical experience treating and diagnosing shoulder pain. - To have at least 10 years of clinical experience treating and diagnosing patients with rotator cuff related shoulder pain. - To have experience as a teacher at the graduate or postgraduate levels.

Supplementary File - Table 2. Round 3 results.

Subjective examination	**Aiken´s V**
Descriptors meeting consensus for the diagnosis of rotator cuff related shoulder pain (RCRSP)	
The onset may be insidious or traumatic.	0.92
Pain with movement of the arm – typically abduction or overhead activities is indicative of RCRSP.	0.88
Pain and weakness with elevation or overhead activities is indicative of RCRSP.	0.85
Pain related to arm load is indicative of RCRSP.	0.82
Could be secondary to atraumatic or microtraumatic instability in younger patients (< 40 years).	0.75
RCRSP origin can be related to a decreased load and return to normal load (i.e. increased load relatively).	0.73
Pain in the deltoid region is indicative of RCRSP.	0.73
Role of inactivity on symptoms is useful for the diagnosis of RCRSP. For example, pain with movement(s) that is reduced by rest.	0.72
RCRSP affects sleep.	0.70
Patients with RCRSP should not have neurological symptoms.	0.70
RCRSP origin may not be related to a change in physical load, but same load with poor sleep, increased smoking, or other increased stress.	0.70
Descriptors not meeting consensus for the diagnosis of RCRSP	
Age typically over 40 years.	0.63
Patient-reported outcome measures	
Descriptors meeting consensus for the diagnosis of RCRSP	
Patient-reported outcome measures are not critical to make a diagnosis of RCRSP, but critical to managing the patient for treatment and prognosis.	0.92
Diagnostic imaging	
Descriptors meeting consensus for the diagnosis of RCRSP	
Imaging is not routinely indicated, unless red flags suspected.	0.82
Imaging may be relevant when patient has not responded to minimum 3 months conservative treatment.	0.78
Diagnosis imaging is required if patient has a history of trauma.	0.77
Diagnostic image is not indicated unless history of cancer or trauma.	0.75
Physical examination	
Descriptors meeting consensus for the diagnosis of RCRSP	
Active ROM assessment of the shoulder should be done in patients suspected of RCRSP.	0.92
Pain with resisted movements is indicative of RCRSP.	0.83
Pain on resisted abduction is indicative of RCRSP.	0.78
Muscle strength tests should be done in patients suspected of RCRSP.	0.78
Pain often on resisted external rotation is indicative of RCRSP.	0.73
Pain and weakness most important for the diagnosis of RCRSP.	0.73
Special Tests	
Descriptors not meeting consensus for the diagnosis of RCRSP	
Depending on the condition some tests may be needed.	0.68
Functional Tests	
Descriptors meeting consensus for the diagnosis of RCRSP.	
Functional testing is relevant for patients with subtle symptoms or end stage rehabilitation.	0.78
Use patient's functional problem movement as a basis for symptom modification.	0.75

Supplementary File - Table 3. Descriptors from previous pilot Delphy study not meeting consensus in Round 1

Subjective examination	**Aiken´s V**
May follow a period of increased activity.	0.67
Patient-reported outcome measures	
Not relevant to the diagnosis.	0.60
Diagnostic imaging	
The management (surgical and non-surgical) of rotator cuff related shoulder pain (RCRSP) is not influenced by the image.	0.62
Physical examination	
Patients with RCRSP often have limited internal rotation but not always.	0.68
Patients with RCRSP should not have pain or limited range of movement in cervical extension-rotation.	0.57
Patients with RCRSP should not have pain on palpation of the cervical spine.	0.50
Full range of passive external rotation is indicative of RCRSP.	0.47
Full range of motion of the cervical spine is indicative of RCRSP.	0.42
Special tests	
Any active test resisted (or not) that reproduces pain in a systematic way (same conditions: directionality, activity, load, speed, position, functional activity). Not necessary to use any "special" test. It's no more useful to use orthopaedic tests looking for other conditions (e.g., lag sign, instability, …).	0.58

Supplementary File - Table 4. Freely proposed descriptors by experts in Round 1

Subjective examination
Pain and weakness with elevation or overhead activities is indicative of rotator cuff related shoulder pain (RCRSP).
Could be secondary to atraumatic or microtraumatic instability in younger patients (< 40 years).
Patients with RCRSP should not have neurological symptoms.
Role of inactivity on symptoms is useful for the diagnosis of RCRSP. For example, pain with movement(s) that is reduced by rest.
RCRSP affects sleep.
RCRSP origin can be related to a decreased load and return to normal load (i.e. increased load relatively).
RCRSP origin may not be related to a change in physical load, but same load with poor sleep, increased smoking, or other increased stress.
Pain related to arm load is indicative of RCRSP.
Could be anterior pain in the proximal biceps region if the interval or subscapularis is involved.
RCRSP is related to frequency of recreational activities.
RCRSP is related to patient's recreational activity.
No pain radiation below elbow is indicative of RCRSP.
RCRSP is related to patient's occupation.
History of smoking is related to RCRSP.
Age prevalence of RCRSP seems to vary according to the environment.
No pain radiation to the cervical spine is indicative of RCRSP.
RCRSP is usually present in dominant arm.
No/minimal rest pain is indicative of RCRSP.
Patient-reported outcome measures
Patient-reported outcome measures are not critical to make a diagnosis of RCRSP, but critical to managing the patient for treatment and prognosis.
Psychosocial or behavioral questionnaires are relevant for the diagnosis.
Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire is useful for the diagnosis of RCRSP.
Patient Specific Functional Scale is useful for the diagnosis of RCRSP.
Upper Limb Functional Index is useful for the diagnosis of RCRSP.
Patient-reported outcome measures are useful for exclusion of other causes of shoulder pain like cervical origin or frozen shoulder syndrome.
Any questionnaire is relevant for the diagnosis of RCRSP.
Diagnostic imaging
Imaging may be relevant when patient has not responded to minimum 3 months conservative treatment.
Diagnosis imaging is required if patient has a history of trauma.
Imaging is not routinely indicated, unless red flags suspected.
Imaging is not routinely indicated, unless unusual pattern of recovery (no recovery/ worsening).
Imaging is more useful to identify other possible reasons for symptoms rather than confirm diagnosis of RCRSP.
Imaging should not be taken into account in most cases.
Diagnostic imaging may be necessary to differentiate patients susceptible to surgery.
The usefulness of diagnostic imaging for the diagnosis of RCRSP depends on patient population.
Diagnostic imaging is relevant if patient has increasing cuff weakness.
Diagnostic imaging is relevant if patient has had multiple presentations over time.
Diagnostic ultrasound is useful for the diagnosis of RCRSP.
Radiography is sufficient in the first instance, if indicated.

Physical examination

Pain with resisted movements is indicative of RCRSP.
Pain and weakness most important for the diagnosis of RCRSP.
Active tests and active ROM more valid than passive tests for the diagnosis of RCRSP.
It is important to evaluate pain throughout range of motion versus end range for comparing RCRSP vs frozen shoulder.
No neurological signs are indicative of RCRSP.
Normal passive motion is indicative of RCRSP.
Pain is not always the symptom, often weakness without pain is the main issue in patients with RCRSP.
No pain reproduction with compression test for the neck is indicative of RCRSP.
Cuff strength assessment in prone is better than gross tests in standing for diagnosis of RCRSP.
Palpation is useful for the diagnosis of RCRSP.

Special tests

Depending on the condition some tests may be needed.
For subscapularis, belly press or hand behind back positive.
Orthopaedic tests could be used as symptoms provocation tests.
For supraspinatus empty can/full can positive.
Lag signs are useful in the diagnosis of RCRSP.
If weakness but not pain in external rotation lag it is indicative of RCRSP.
Special tests can be very helpful to put the patient in a general category of RCRSP.
If weakness > pain in the empty can / full can test it is indicative of RCRSP.
For biceps, speed's positive (for pain and often weakness).
Pain in Hawkins - Kennedy test is indicative of RCRSP.

Functional tests

Functional testing is relevant for patients with subtle symptoms or end stage rehabilitation.
Use patient's functional problem movement as a basis for symptom modification.
May get patient to perform one of their aggravating factors if clarification needed but not often, subjective information usually enough and is not necessary to aggravate patient's condition with this kind of tests.
Scapular assistance test is useful in the diagnosis of RCRSP.
Ask the patient to simulate washing the back, combing the hair, or brushing teeth is useful for the diagnosis of RCRSP.
Functional tasks should not be used initially for the diagnosis of RCRSP.
Timed Functional Arm and Shoulder Test (TFAST) is useful for the diagnosis of RCRSP.
Closed Kinetic Chain Upper Extremity Stability Test (CKCUES) is useful for the diagnosis of RCRSP.
Upper Quarter Y-Balance Test (UQYBT) is useful for the diagnosis of RCRSP.

Supplementary File - Table 5. Round 2 Results

Subjective examination	**Aiken´s V**
Descriptors meeting consensus for the diagnosis of rotator cuff related shoulder pain (RCRSP)	
The onset may be insidious or traumatic.	0.92
Pain with movement of the arm – typically abduction or overhead activities is indicative of RCRSP.	0.88
Pain and weakness with elevation or overhead activities is indicative of RCRSP.	0.82
Could be secondary to atraumatic or microtraumatic instability in younger patients (< 40 years).	0.77
Patients with RCRSP should not have neurological symptoms.	0.77
Role of inactivity on symptoms is useful for the diagnosis of RCRSP. For example, pain with movement(s) that is reduced by rest.	0.75
RCRSP affects sleep.	0.75
RCRSP origin can be related to a decreased load and return to normal load (i.e. increased load relatively).	0.73
RCRSP origin may not be related to a change in physical load, but same load with poor sleep, increased smoking, or other increased stress.	0.72
Pain related to arm load is indicative of RCRSP.	0.72
Age typically over 40 years.	0.72
Pain in the deltoid region is indicative of RCRSP.	0.70
Descriptors not meeting consensus for the diagnosis of RCRSP	
Could be anterior pain in the proximal biceps region if the interval or subscapularis is involved.	0.68
RCRSP is related to frequency of recreational activities.	0.68
RCRSP is related to patient's recreational activity.	0.67
No pain radiation below elbow is indicative of RCRSP.	0.67
RCRSP is related to patient's occupation.	0.65
History of smoking is related to RCRSP.	0.63
Age prevalence of RCRSP seems to vary according to the environment.	0.62
No pain radiation to the cervical spine is indicative of RCRSP.	0.58
RCRSP is usually present in dominant arm.	0.53
No/minimal rest pain is indicative of RCRSP.	0.53
Patient-reported outcome measures	
Descriptors meeting consensus for the diagnosis of RCRSP	
Patient-reported outcome measures are not critical to make a diagnosis of RCRSP, but critical to managing the patient for treatment and prognosis.	0.88
Descriptors not meeting consensus for the diagnosis of RCRSP	
Psychosocial or behavioral questionnaires are relevant for the diagnosis.	0.50
Disabilities of the Arm, Shoulder and Hand (DASH) is useful for the diagnosis of RCRSP.	0.47
Patient-Specific Functional Scale is useful for the diagnosis of RCRSP.	0.45
Upper Limb Functional Index is useful for the diagnosis of RCRSP.	0.43
Patient-reported outcome measures are useful for exclusion of other causes of shoulder pain like cervical origin or frozen shoulder syndrome.	0.37
Any questionnaire is relevant to the diagnosis of RCRSP.	0.28
Diagnostic imaging	
Descriptors meeting consensus for the diagnosis of RCRSP	
Imaging may be relevant when patient has not responded to minimum 3 months conservative treatment.	0.80
Diagnosis imaging is required if patient has a history of trauma.	0.77
Diagnostic imaging is not indicated without a history of cancer or trauma.	0.70
Imaging is not routinely indicated, unless red flags are suspected.	0.70

Descriptors not meeting consensus for the diagnosis of RCRSP	
Imaging is not routinely indicated, unless unusual pattern of recovery (no recovery/ worsening).	0.68
Imaging is more useful to identify other possible reasons for symptoms rather than confirm diagnosis of RCRSP.	0.68
Imaging should not be taken into account in most cases.	0.68
Diagnostic imaging may be necessary to differentiate patients susceptible to surgery.	0.63
The usefulness of diagnostic imaging for the diagnosis of RCRSP depends on patient population.	0.62
Diagnostic imaging is relevant if patient has increasing cuff weakness.	0.55
Diagnostic imaging is relevant if patient has had multiple presentations over time.	0.55
Diagnostic ultrasound is useful for the diagnosis of RCRSP.	0.55
Radiographs is sufficient in the first instance, if indicated.	0.48
Physical examination	
Descriptors meeting consensus for the diagnosis of RCRSP	
Active ROM assessment of the shoulder should be done in patients suspected of RCRSP.	0.95
Pain with resisted movements is indicative of RCRSP.	0.83
Muscle strength tests should be done in patients suspected of RCRSP.	0.83
Pain on resisted abduction is indicative of RCRSP.	0.82
Pain and weakness most important for the diagnosis of RCRSP.	0.82
Pain often on resisted external rotation is indicative of RCRSP.	0.78
Descriptors not meeting consensus for the diagnosis of RCRSP	
Active tests and active ROM are more valid than passive tests for the diagnosis of RCRSP.	0.65
It is important to evaluate pain throughout range of motion versus end range for comparing RCRSP versus frozen shoulder.	0.63
No neurological signs is indicative of RCRSP.	0.61
Normal passive motion is indicative of RCRSP.	0.58
Pain is not always the symptom, often weakness without pain is the main issue in patients with RCRSP.	0.43
No pain reproduction with compression test for the neck is indicative of RCRSP.	0.38
Cuff strength assessment in prone is better than gross tests in standing for diagnosis of RCRSP.	0.38
Palpation is useful for the diagnosis of RCRSP.	0.31
Special tests	
Descriptors meeting consensus for the diagnosis of RCRSP	
Depending on the condition some tests may be needed.	0.70
Descriptors not meeting consensus for the diagnosis of RCRSP	
For subscapularis, belly press or hand behind back positive.	0.68
Orthopaedic tests could be used as symptoms provocation tests.	0.67
For supraspinatus empty can/full can positive.	0.65
Lag signs are useful in the diagnosis of RCRSP.	0.60
Weakness but not pain in external rotation lag is indicative of RCRSP.	0.58
Special tests can be very helpful to put the patient in a general category of RCRSP.	0.53
Weakness > pain in the empty can / full can test it is indicative of RCRSP.	0.53
For biceps, speed's positive (for pain and often weakness).	0.50
Pain in Hawkins - Kennedy's test is indicative of RCRSP.	0.42
Functional tests	
Descriptors meeting consensus for the diagnosis of RCRSP	
Functional testing is relevant for patients with subtle symptoms or end-stage rehabilitation.	0.80
Use patient's functional problem movement as a basis for symptom modification.	0.78

Descriptors not meeting consensus for the diagnosis of RCRSP	
May get patient to perform one of their aggravating factors if clarification needed but not often, subjective information usually enough and is not necessary to aggravate patient's condition with these kind of tests.	0.56
Scapular assistance test is useful in the diagnosis of RCRSP.	0.53
Ask the patient to simulate washing the back, combing the hair, or brushing teeth is useful for the diagnosis of RCRSP.	0.45
Functional tasks should not be used initially for the diagnosis of RCRSP.	0.37
Timed Functional Arm and Shoulder Test (TFAST) is useful for the diagnosis of RCRSP.	0.30
Closed Kinetic Chain Upper Extremity Stability Test (CKCUES) is useful for the diagnosis of RCRSP.	0.25
Upper Quarter Y-Balance Test (UQYBT) is useful for the diagnosis of RCRSP.	0.22